Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of claims:

1.   (currently amended) A method of segmenting ~~an image of~~ a structure from a dataset stored as a set of spatially related data points ~~representing variations in a predetermined parameter~~, said method comprising the steps of: ~~selecting an initial location within the structure to be segmented; assigning to each of the data points a value of connectivity indicative of the confidence that respective ones of the data points are part of the same structure as said initial location, said value of connectivity including a function of the distance of the respective point from said initial location, and being assigned by monitoring variations in said predetermined parameter along a path between said data points and utilizing a function employing variations in said parameter as an indicator of said value of connectivity; and establishing a threshold value for said value of connectivity and selecting data points meeting said threshold value.~~

a) obtaining said dataset from a database;

b) enabling selection of a seed point within a desired structure to be segmented from said dataset;

c) for each data point in said dataset:

i) determining a path from said seed point to said data point;

ii) examining variations in a predetermined characteristic of other data points along said path; and

iii) defining a confidence level representing connectivity from a respective data point to said seed point based on a function of said variations in said predetermined characteristic and a distance from said seed point along said path;

d) determining if additional paths exist between said seed point and, if so, repeating step c) and selecting a path with a highest confidence level; and

e) segmenting said structure by selecting data points with a required confidence level that said data points selected belong to the same structure as said seed point.

2.   (canceled)

3.   (previously presented) A method according to claim 1 wherein the length of said path is combined with said function employing variations of said parameter to obtain said value of connectivity.

4.   (previously presented) A method according to claim 1 wherein a weighting factor is applied to said length of said path to vary the effect of said distance and said value of connectivity.

5.   (original) A method according to claim 4 wherein said weighting factor is variable.

6.   (currently amended) A method according to claim 1 wherein said required confidence establishes a threshold value for said connectivity and is adjustable to vary the data points selected for display.

7.   (previously presented) A method according to claim 1 wherein said function employing variations in said parameter is an indication of the maximum variation in said parameter.

8.   (cancel)

9.   (currently amended) A method according to claim [[8]] 1 wherein [[said]] a plurality of paths are evaluated and [[is]] limited by application of a volume size value.

10.   (original) A method according to claim 3 wherein a value of said predetermined parameter is mapped to a table to assign one of a plurality of values thereto and said evaluation of variation of said parameter is evaluated on the basis of values obtained from said table.

11.   (original) A method according to claim 3 wherein values of said predetermined parameter are compared to a predefined range of values and those outside said range modified.

12.   (original) A method according to claim 11 wherein said values are modified by reducing said values to zero.

13.   (original) A method according to claim 3 wherein an area of said image is selected and values of said predetermined parameter in said area are modified.

14.   (previously presented) A method according to claim 13 wherein said values are modified by reducing said values to zero.

15.   (original) A method according to claim 3 wherein values of said predetermined characteristic are exceeding said threshold are changed to a common value.

16.   (currently amended) A method according to claim 3 wherein values of said predetermined parameter~~s~~ are compared to said <u>seed point</u> ~~initial location~~ and those within predefined limits of that of said <u>seed point</u> ~~initial location~~ are selected for further processing.

17.   (original) A method according to claim 1 wherein the number of the selected data points is compared to an anticipated value.

18.   (currently amended) A method according to claim 17 wherein [[said]] <u>a</u> threshold <u>for said required confidence</u> is adjusted to bring said number of selected data points into conformity with said anticipated value.

19.   (original) A method according to claim 17 wherein said set of selected data points represents a volume of a structure.

20.   (currently amended) A method according to claim 1 wherein said <u>seed point</u> ~~initial location~~ is selected from a set of data points other than those being segmented.

21.   (currently amended) A method according to claim 20 wherein said <u>seed point</u> ~~initial location~~ is selected based upon characteristics in said data set indicative of a particular feature.

22.   (currently amended) A method according to claim 1 wherein said <u>seed point</u> ~~initial location~~ is selected from examination of a set of data points to identify a characteristic indicative of a particular feature.

23. (currently amended) A computer readable medium comprising computer executable instructions that when executed cause a computing device to ~~An imaging apparatus comprising: a data store having an image of a structure stored as a set of spatially related data points representing variations in a predetermined parameter; a comparator to compare a value of said predetermined parameter at each of said data points with that of an initial location within said structure to be segmented to establish a value of connectivity indicative of the confidence that respective ones of said data points are part of the same structure, said value of connectivity including a function of the distance of the respective point from said initial location and being established by monitoring variations in said predetermined parameter along a path between said data points and utilizing a function employing variations in said parameter as an indicator of said value of connectivity; and a selector to select respective points that meet an established threshold.~~

a) obtain said dataset from a database;

b) enable selection of a seed point within a desired structure to be segmented from said dataset;

c) for each data point in said dataset:

i) determine a path from said seed point to said data point;

ii) examine variations in a predetermined characteristic of other data points along said path; and

iii) define a confidence level representing connectivity from a respective data point to said seed point based on a function of said variations in said predetermined characteristic and a distance from said seed point along said path;

d) determine if additional paths exist between said seed point and, if so, repeating step c) and select a path with a highest confidence level; and

e) segment said structure by selecting data points with a required confidence level that said data points selected belong to the same structure as said seed point.

24. (currently amended) The computer readable medium according to claim 23 wherein the length of said path is combined with said function employing variations of said parameter to obtain said value of connectivity. ~~An apparatus according to claim 23 including a path selector to select a plurality of paths between said initial location and each of said respective points, said comparator selecting a maximum value of connectivity.~~

25.   (currently amended) <u>The computer readable medium according to claim 23 wherein a weighting factor is applied to said length of said path to vary the effect of said distance and said value of connectivity.</u> ~~A method of selecting an initial location for segmenting an image of a structure stored as a set of spatially related data points representing variations in a predetermined parameter, said method comprising the steps of examining a data set pertaining to said structure to identify one or more characteristics of said structure; and selecting said initial location according an identification of said one or more characteristics.~~

26.   (currently amended) <u>The computer readable medium according to claim 23 wherein said required confidence establishes a threshold value for said connectivity and is adjustable to vary the data points selected for display.</u> ~~A method according to claim 25 wherein said data set is said set of spatially related data points.~~

27.   (currently amended) <u>The computer readable medium according to claim 24 wherein a value of said predetermined parameter is mapped to a table to assign one of a plurality of values thereto and said evaluation of variation of said parameter is evaluated on the basis of values obtained from said table.</u> ~~A method according to claim 25 wherein said data set is obtained from a set of data points other than those being segmented.~~

28.   (previously presented) A method of establishing a threshold value for segmenting an image of a structure stored as a set of spatially related data points representing variations in a predetermined parameter, said method comprising the steps of: establishing a first number of data points expected to represent a segmented feature of said image; establishing said threshold value of a characteristic of said data set; determining a second number of data points meeting said threshold; comparing said first and second number of data points; and adjusting said threshold if said first and second numbers do not correlate.

29.   (previously presented) A method according to claim 28 wherein said threshold is adjusted until said first and second numbers substantially correspond to each other.

30.   (currently amended) A computer readable medium comprising computer executable instructions that when executed cause a computing device to perform the method according to

claim [[1]] 28.

31.   (currently amended) [[A]] The computer readable medium according to claim 24 wherein values of said predetermined parameters are compared to said seed point and those within predefined limits of that of said seed point are selected for further processing. comprising computer executable instructions that when executed cause a computing device to perform the method according to claim 25.

32.   (currently amended) [[A]] The computer readable medium according to claim 23 wherein said seed point is selected from examination of a set of data points to identify a characteristic indicative of a particular feature comprising computer executable instructions that when executed cause a computing device to perform the method according to claim 28.